ABSTRACT OF THE DISCLOSURE

In an internal combustion engine wherein a valve timing can be changed in at least two stages and wherein an exhaust gas recirculation passage provided with a control valve is connected to an intake pipe downstream of a throttle valve, there is provided an intake air amount estimation apparatus that estimates, on the basis of an intake pipe pressure, an amount of intake air drawn via the throttle valve. An amount of recirculated exhaust gas flowing past the control valve having a specific opening degree based on an intake pipe pressure in the case of the first valve timing is calculated as an intake exhaust gas amount. On the assumption that this intake exhaust gas amount remains unchanged irrespective of a valve timing, an intake air amount in the case of the second valve timing is calculated.